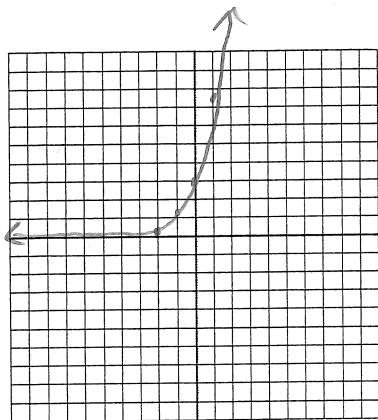


Name: Key

Graph the function.

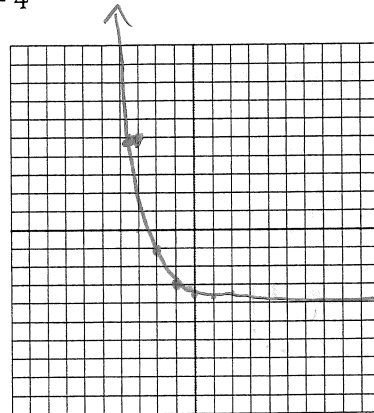
1. $y = 3(2.5)^x$

X	Y
-2	.48
-1	1.2
0	3
1	7.5
2	18.75



2. $y = \left(\frac{1}{3}\right)^{x+1} - 4$

X	Y
-3	5
-2	-1
-1	-3
0	-3.7
1	-3.9
2	-4



3. You deposit \$1500 in an account that pays 7% annual interest compounded daily. Find the balance after 2 years.

$$Y = 1500 \left(1 + \frac{.07}{365}\right)^{365 \cdot 2}$$

$$Y = \$1725.39$$

4. Your new computer cost \$2600. The value of the computer decreases by about 15% each year. How much will the computer be worth in 2 years?

$$Y = 2600 (1 - .15)^2$$

$$Y = \$1878.50$$

Evaluate the logarithm.

5. $\log_3 243 = 5$

6. $\log_7 1 = 0$

7. $\log_{1/6} 216 = -3$

Expand the expression.

8. $\log_8 3xy$

$$\log_8 3 + \log_8 x + \log_8 y$$

9. $\log \frac{8}{y^4}$

$$\log 8 - 4 \log y$$

10. $\log_2 \left(\frac{x}{y}\right)^3$

$$3[\log_2 x - \log_2 y]$$

Condense the expression.

11. $3 \log_7 4 + \log_7 6$

$$\log_7 4^3 \cdot 6$$
$$\log_7 384$$

12. $\ln 12 - 2 \ln x$

$$\ln(12x^2)$$

13. $4 \log x + 4 \log y$

$$\log(x^4 y^4)$$

Solve the equation.

14. $2^x = 32$

$$\log_2 32 = x$$
$$x = 5$$

15. $18^x = 10$

$$\log_{18} 10 = x$$

$$x = .797$$

16. $\log_3(2x - 5) = 2$

$$3^2 = 2x - 5$$

$$9 = 2x - 5$$

$$14 = 2x$$

$$x = 7$$

17. $\log_2 2x + \log_2(x + 4) = 6$

$$\log_2(2x^2 + 8x) = 6$$

$$2^6 = 2x^2 + 8x$$

$$0 = 2(x^2 + 4x - 32)$$

$$0 = 2(x + 8)(x - 4)$$

$$x = -8 \quad x = 4$$

18. $2 \log_2(3x - 7) = 10$

$$\log_2(3x - 7) = 5$$

$$2^5 = 3x - 7$$

$$32 = 3x - 7$$

$$39 = 3x$$

$$x = 13$$

19. $\log_4 x + \log_4(x + 6) = 2$

$$\log_4(x^2 + 6x) = 2$$

$$4^2 = x^2 + 6x$$

$$0 = x^2 + 6x - 16$$

$$0 = (x + 8)(x - 2)$$

$$x = -8 \quad x = 2$$